

5. (AMENDED) A eukaryotic virus pseudo-nucleocapsid consisting essentially of:  
at least a portion of a viral capsid polypeptide, wherein the viral capsid polypeptide comprises at least the first 124 amino-terminal residues of a hepatitis C virus core protein; and  
a polynucleotide, wherein said viral capsid polypeptide and polynucleotide together participate in formation of a generally spheroid pseudo-nucleocapsid in vitro after which no additional purification step is required.

C1 6. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said viral capsid polypeptide is a homologous sequence of a core protein from a member of the *Flaviviridae* family.

C2 49. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said polynucleotide is a tRNA of at least 10 nucleotides.

C3 51. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said viral capsid polypeptide is a recombinant polypeptide.

C4 53. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said viral capsid polypeptide consists essentially of SEQ ID NO.: 1.

C5 55. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said polynucleotide is from the group consisting of hepatitis C virus genome and member of the *Flaviviridae* family.

C6 60. (AMENDED) The virus pseudo-nucleocapsid of claim 5, wherein said viral capsid polypeptide is formed by adding to a cell-free in vitro system a recombinant DNA consisting essentially of at least the first 124 amino-terminal residues of the hepatitis C virus core protein or a homologous sequence of a core protein from a member of the *Flaviviridae* family.

Add new claims 66-74 as follows:

C7 66. (NEW) A eukaryotic virus pseudo-nucleocapsid consisting essentially of:  
at least a portion of a recombinant viral capsid polypeptide, wherein the polypeptide comprises at least the first 124 amino-terminal residues of a hepatitis C virus core protein; and

a polynucleotide comprising an RNA of at least 10 nucleotides that forms a stem-loop structure, wherein said recombinant viral capsid polypeptide and polynucleotide together participate in formation of a generally spheroid pseudo-nucleocapsid in vitro.

67. (NEW) A eukaryotic virus pseudo-nucleocapsid consisting essentially of:

at least a portion of a viral capsid polypeptide, wherein the polypeptide comprises at least the first 124 amino-terminal residues of a hepatitis C virus core protein; and

a polynucleotide comprising an RNA of at least about 10 nucleotides that forms a stem-loop structure, wherein said viral capsid polypeptide and polynucleotide together participate in formation of a generally spheroid pseudo-nucleocapsid in vitro.

68. (NEW) A eukaryotic virus pseudo-nucleocapsid consisting essentially of:

at least a portion of a recombinant viral capsid polypeptide, wherein the recombinant viral capsid polypeptide comprises at least about the first 124 amino-terminal residues of the group consisting of a hepatitis C virus core protein and a homologous sequence of a core protein from a member of the *Flaviviridae* family; and

a polynucleotide, wherein said recombinant viral capsid polypeptide and polynucleotide together participate in formation of a generally spheroid pseudo-nucleocapsid in vitro after which no additional purification step is required.

69. (NEW) A method of preparing a eukaryotic virus pseudo-nucleocapsid consisting essentially of:

contacting a portion of a recombinant viral capsid polypeptide with a polynucleotide, wherein the recombinant viral capsid polypeptide comprises at least about the first 124 amino-terminal residues of the group consisting of a hepatitis C virus core protein and homologous sequence of a core protein from a member of the *Flaviviridae* family; and

allowing said recombinant viral capsid polypeptide and polynucleotide to participate in formation of a generally spheroid pseudo-nucleocapsid in vitro after which no additional purification step is required.

70. (NEW) A method of preparing a eukaryotic virus pseudo-nucleocapsid consisting essentially of:

contacting a portion of a recombinant viral capsid polypeptide and only a polynucleotide, wherein the recombinant viral capsid polypeptide comprises at least about the first 124 amino-terminal residues of the group consisting of a hepatitis C virus core protein and homologous sequence of a core protein from a member of the *Flaviviridae* family and the polynucleotide comprises at least about 10 nucleotides that forms a stem-loop structure; and

allowing said recombinant viral capsid polypeptide and polynucleotide to participate in formation of a generally spheroid pseudo-nucleocapsid in vitro.

71. (NEW) A method of preparing a eukaryotic virus pseudo-nucleocapsid consisting essentially of:

purifying at least the first 124 amino-terminal residues of a hepatitis C virus core protein or a homologous sequence of a core protein from a member of the *Flaviviridae* family;

introducing to the purified core protein a polynucleotide of at least 10 nucleotides and able to form a stem-loop structure; and

allowing generally spheroid pseudo-nucleocapsids to form.

72. (NEW) The method of claim 71, wherein inhibitors of eukaryotic virus pseudo-nucleocapsid assembly and disassembly are added.

73. (NEW) The method of claim 71, wherein the generally spheroid pseudo-nucleocapsids are crystallized.

74. (NEW) A method of preparing a eukaryotic virus pseudo-nucleocapsid consisting essentially of:

constructing a vector containing at least the first 124 amino-terminal residues of a hepatitis C virus core protein or a homologous sequence of a core protein from a member of the *Flaviviridae* family;

using the vector to express the core protein in vitro;

purifying the core protein;

introducing to the purified core protein a polynucleotide of at least 10 nucleotides and able to form a stem-loop structure; and

allowing generally spheroid pseudo-nucleocapsids to form.